UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/770,712	02/03/2004	Aristo Vojdani	IMSCI2.008A	2285

20995 7590 02/07/2007

KNOBBE MARTENS OLSON & BEAR LLP
2040 MAIN STREET
FOURTEENTH FLOOR
IRVINE, CA 92614

EXAMINER	
CHEU, CHANGHWA J	
ART UNIT	**PAPER NUMBER**
1641	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	02/07/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date" and has a shortened statutory period for reply of 3 MONTHS from 02/07/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

jcartee@kmob.com
eOAPilot@kmob.com

Office Action Summary	Application No.	Applicant(s)	
	10/770,712	VOJDANI, ARISTO	
	Examiner	Art Unit	
	Jacob Cheu	1641	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *16 November 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20 and 24-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20 and 24-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Applicant's amendment filed on 11/16/2006 and Dr. Vojdani affidavit filed on 8/24/2006 has been received and entered into record and considered.

The following information provided in the amendment affects the instant application:

1. Claims 21-23 cancelled.
2. Claims 1-20 and 24-30 are under examination.

Claim Objections

With respect to claim 20, "dipeptidyl peptidase IV" and "somatostatin" are duplicated recited in the same claim. Applicant needs to delete the duplicate ones.

Claim Rejections - 35 USC § 112

Enablement

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

As set forth in *In re Wands, 858 F .2d 731, 8 USPQ2d 1400 (Fed. Cir. 1988)*, enablement requires that the specification teach those skilled in the art to make and use the invention without

undue experimentation. Factors to be considered in determining, whether a disclosure would require undue experimentation include 1) the nature of the invention, 2) the state of the prior art, 3) the predictability or lack thereof in the art, 4) the amount of direction or guidance present, 5) the presence or absence of working examples, 6) the quantity of experimentation necessary, 7) the relative skill of those in the art, and 8) the breadth of the claims.

The instant invention directs to a method of *diagnosing* an autistic spectrum disorder by measuring a plurality of antigen/or antibody, including at least one infectious agent derived antibody or antigen, or at least one toxicant derived antigen or antibody and at least one dietary protein derived antigen or antibody and compared to the levels of control (emphasis added)(note, this method is not for determining *etiology* of autistic disorder).

However, the comparing step (b)(i)-(ii) recites "wherein normal level or lower than normal level of antigens and/or antibodies for the each of said antigens indicate the *presence* of autistic spectrum disorder and higher than normal level of antigens and or antibodies for one or more of said antigens and or antibodies (indicate) the *presence* of autistic spectrum disorder".

Under such condition, it would be no difference whether the levels of the selected antigen or antibodies are higher or lower than that of the control one. Examiner consider step (b)(i) is a type error. This should be corrected as "absence" as the original claim language. Otherwise, it would certainly impose undue experimentation to one ordinary skill in the art as to how to use and how to interpret the results in relation to the purpose of diagnosing autistic spectrum disorder. Furthermore, the similar step also recited in claim 20, however, step (b)(i) indicate "absence" of the autistic spectrum disorder.

Scope of Enablement

3. Claims 8, 20, 24-30 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being aminopeptidase, dipeptidyl peptidase IV, or CD13,26 and 69, does not

reasonably provide enablement for all "ENZYME, DIGESTIVE ENZYMES, COLON TISSUE ANTIGEN, BRUSH BORDER ANIIGENS, EPITHELIA CELLS" The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

Examiner acknowledges the clinical data from the comparison of both normal and autistic patients. Applicant submitted lists of antibodies (IgG, IgM and IgA) related to infectious agents, peptides, CD antigens, and various transmitter proteins (See Table 1-2). However, no data or guidance or working example is provided as to the above mentioned "ENZYME, DIGESTIVE ENZYMES, COLON TISSUE ANTIGEN, BRUSH BORDER ANIIGENS, EPITHELIA CELLS".

It is noted that each of the item listed above has different biological functions, chemical compositions, and physical characteristics. Applicant does not provide information or evidence as to the representative characteristics of each item. For instance, with respect to "enzyme", it is a tremendous broad term encompassing not only neurological enzymes which is pertinent to the instant austism neuron-disease. The scope of "enzyme" could also include reproductive enzyme, for example, enzymes responsible for maturing of sperm. It is very unlikely that the young child, e.g. 3-5, who has been diagnosed with autistic syndrome would have the reproductive enzymes to be detected! Furthermore, another example is the "epithelial cells". First of all, no example of what source of epithelia cells is disclosed or used. Similarly, "epithelial" cells could also involve in reproductive organ development and maturation. With such a young age, it is unlikely to correlate the appearance with the "reproductive epithelia cells" antibody. The etiology of autism is extremely complex and majority of the research is still in its infancy. Without sufficient instruction and working guidance, the unpredictability of this disease would inevitably impose undue experimentation to one ordinary skill in the art as to how to use and apply the instant recited method.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-7, 9, 11-14, 17-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Vojdani et al. (J Neuroimmunology 2002 Vol. 129, page 168-177, applicant submitted IDS on 5/7/2004).

Vojdani et al. teach determining levels of antibodies derived from infectious agents, Chlamydia pneumoniae or streptococcal M protein, and dietary peptide milk butyrophilin in patients, and chemical toxic mercury-related myelin basic protein (MBP), in autistic patients and observed the elevated levels of the said antibodies in autistic patients (See page Abstract; page 175, right column, fourth paragraph).

With respect to claim 3, Vojdani et al. found out that the microbial peptides from measles, rubella, cytomegalovirus are cross-reactive with the human brain tissue and MBP (See page 175, right column, fourth paragraph).

With respect to claims 6-7, Vojdani et al. disclosed that the human brain tissue can cross-react with the infectious microbial peptide. Supra.

With respect to claim 11, Vojdani et al. teach using detection of milk bytyrophilin antibodies in the patient's sample. Supra.

With respect to claims 13-14, the results are reflected to the autistic spectrum disorder. Supra.

With respect to claims 15-16, the data show the levels of antibodies in autistic patients are higher than the normal population for at least two standard deviation (See Figure 4).

With respect to claims 17-19, Vojdani et al. teach using ELISA immunoassay to detect the antibodies (See Method and Materials).

Response to Applicant's Arguments

4. The rejections under Cooper et al. (Intl. J. Immunopathololgy and Pharm. 2003 Vol. 16. page 289) are withdrawn in view of the Affidavit filed on 8/29/2006 under Rule 1.131. Applicant indicated that the Cooper et al. did not contribute the recited invention but were laboratory technicians.

5. Similarly, the rejections under Vojani et al. (Intl. J. Immunopathololgy and Pharm. 2003 Vol. 16. page 189) are withdrawn in view of the Affidavit filed on 8/29/2006 under Rule 1.131. Applicant indicated that other than applicants, the others in the papers did not contribute the recited invention but were laboratory technicians.

6. Applicant's arguments with respect to claims 1-20, 24-30 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. No claim is allowed.

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jacob Cheu whose telephone number is 571-272-0814. The examiner can normally be reached on 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Long Le can be reached on 571-272-0823. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jacob Cheu
Examiner
Art Unit 1641

January 29, 2007

LONG V. LE 02/01/07
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600